DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-026637
Date Inspected: 03-Nov-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Job Site

CWI Name: Steve Jensen and Salvador Merino

CWI Present:	☑ Yes	☐ No					
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☐ No	☑ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS OBG

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

QA randomly observed ABF/JV qualified welder Jin Pei Wang continuing to perform CJP groove (splice) welding fill pass on Orthotropic Box Girder (OBG) 12E/13E bottom plate ‘D1’. The welder was observed welding in the 4G (overhead) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16” diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3110-4. The welder was using a track mounted welder holder assembly that was remotely controlled. The joint being welded has the backing bar gouged using the Esab Plasma Arc machine and was ground smooth. The splice joint was preheated to greater than 200 degree Fahrenheit prior welding and the vicinity was properly protected from wind. During welding, ABF Quality Control (QC) Fred Von Hoff was noted monitoring the welding parameters of the welder. The parameter readings taken during welding were 275 amperes, 23.8 volts with travel speed of 190 mm per minute travel speed which were deemed acceptable to contract specifications. Prior welding, the welder was noted grinding off the porosity that was present on three locations that was due to shielding gas issue according to the welder. The porosity removal was verified by this QA and after it was cleared, the welder preheated back the plates to required temperature of more than 200°F and then resumed the overhead FCAW-G welding. During the shift, the welding observations for the location mentioned above was turned over to fellow QA Craig Hager and this QA went to OBG 13E/14E bottom and side plates and performed alignment verification of the butt joint fit up.

At OBG 13E/14E bottom plate D1 inside, this QA together with ABF QC Salvador Merino performed a joint preliminary fit up inspection/verification on the butt joint fit up alignment. The OBG 12E bottom plate was measured 30mm while the OBG 13E bottom plate was measured 35mm and the backing bar was put in place at the bottom side of the joint. The following measurements were noted during the verification;

Location between stiffeners	Measurement	Offset due to plate thickness difference	Misalignment
1. 0 – 1	3mm	5mm	+2mm
2. 1 – 2	7	5mm	+2mm
3. 2 – 3	6	5	+1mm
4. 3 – 4	5	5	0
5. 4 – 5	4	5	-1mm
6. 5 – 6	5	5	0
7. 6 – 7	7	5	+2mm
8. 7 – 8	6	5	+1mm
9. 8 – 9	6.5	5	+1.5mm
10. 9 – 10	7	5	+2mm
11. 10-11	6	5	+1mm
12. 11- 12	7	5	+2mm
13. 12 – 13	4	5	-1mm
14. 13 – 14	6	5	+1mm
15. 14 – 15	5	5	0
16. 15 – 16	5	5	0
17. 16 – 17	5	5	0
18. 17 – 18	5	5	0
19. 18 – 19	7	5	+2mm
20. 19 – 20	6	5	+1mm
21. 20 – 21	6	5	+1mm
22. 21 -	6	5	+1mm

Preliminary alignment inspection/verification at plate ‘H’ from inside;

Location between stiffeners	Measurement	Offset due to plate thickness difference	Misalignment
1. 0 - 1	5	5mm	0
2. 1 – 2	6	5	+1mm
3. 2 - 3	3	5	-2mm
4. 3 – 4	2	5	-3mm
5. 4 -	3	5	-2mm

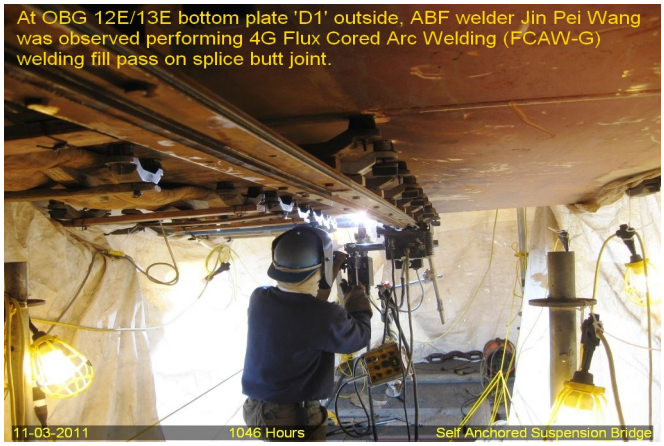
Preliminary alignment inspection/verification at plate ‘I’ from inside;

Location (between stiffeners)	Measurement	Offset due to plate thickness difference	Misalignment

1. 0 – 1 1 0 +1mm
2. 1 – 2 2.5 0 +2.5mm
3. 2 – 3 1 0 +1mm
4. 3 – 4 2 0 +2mm
5. 4 – 5 2 0 +2mm
6. 5 – 6 1.5 0 +1.5mm
7. 6 – 7 0 0 0
8. 7 – 8 2 0 +2mm
9. 8 - 3 0 +3mm

At Cross Beam #1 outside, ABF welders Erick Sparks and Todd Jackson were observed continuing to work on the stair treads modification due to wrong step to step distance (stair tread distance). ABF personnel have noted the stair treads that was fabricated in ZPMC China were having more than 11 inches step to step distance contrary to the contract requirement of 235mm (9 ¼ inches). The welders have removed the welded steps then ground smooth the removal and rewelded back to the required 235mm step to step distance. During fillet welding of the treads, ABF QC Steve Jensen was noted monitoring the welders. At the end of the shift, rewelding of the stair steps was still continuing and should remain tomorrow.

This QAI performed a review of various listed weld joints generated by the QA Lead Inspector, Daniel Reyes. The list was in regards to open Magnetic Particle Test (MPT) Reports. At conclusion of the survey this QAI reported to the QALI that the testing (QA Verification) was completed but there were areas marked by this QAI regarding minor weld profile grinding to be completed. The profile grinding has been completed which resolves these minor issues. For additional information, see the QAI TL-6028 generated on this date. The survey was completed during this shift.



Summary of Conversations:
No significant conversation ocurred today.
Comments
This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials

for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer